

CLAIMS

1. A surfactant aqueous solution for development of a coating layer comprising a surfactant and water or a mixture of water and an organic solvent, wherein the surfactant comprises at least one selected from an N-acylsarcosinate, an N-acyl-N-methylalaninate, an N-acyltaurinate, an N-acyl-N-methyltaurinate, a fatty acid alkylol amide, and a fatty acid alkylol amide polyoxyethylene adduct.

2. The surfactant aqueous solution for development of a coating layer according to claim 1, wherein the number of carbon atoms of the acyl group of the surfactant is 10 to 14.

3. The surfactant aqueous solution for development of a coating layer according to claim 1 or 2, wherein the surfactant is at least one selected from N-lauroylsarcosinate, N-lauroyl-N-methylalaninate, N-lauroyltaurinate, and N-lauroyl-N-methyltaurinate.

4. The surfactant aqueous solution for development of a coating layer according to claim 1, wherein the counter ion of the N-acylsarcosinate, the N-acyl-N-methylalaninate, the N-acyltaurinate, and the N-acyl-N-methyltaurinate is an organic amine or an organic amine salt.

5. The surfactant aqueous solution for development of a coating layer according to claim 1 or 2, wherein the number of carbon atoms of the fatty acid of the fatty acid alkylol amide or the fatty acid alkylol amide polyoxyethylene adduct is 6 to 22, and the number of carbon atoms of the alkylol group thereof

is 1 to 3, and the number of repeating units of the polyoxyethylene chain of the fatty acid alkylol amide polyoxyethylene adduct is 10 or less.

6. The surfactant aqueous solution for development of a coating layer according to any one of claims 1 to 5, wherein the concentration of the surfactant is 0.01 to 10.0 % by weight.

7. The surfactant aqueous solution for development of a coating layer according to any one of claims 1 to 6, wherein the organic solvent comprises at least one selected from a saturated or unsaturated alcohol with 1 to 8 carbon atoms, a saturated polyvalent alcohol with 2 or 3 hydroxyl groups, a saturated or unsaturated alkyl amine with 1 to 3 carbon atoms, and a saturated or unsaturated alkanol amine with 1 to 3 carbon atoms.

8. The surfactant aqueous solution for development of a coating layer according to any one of claims 1 to 7, wherein water and the organic solvent are mixed in a ratio of water to the organic solvent of 80:20 to 99:1.

9. A method of forming a pattern comprising forming a coating layer on a resist pattern, thickening the resist pattern by crosslinking of the coating layer, and removing the uncrosslinked coating layer with a developer to effectively make the pattern finer, wherein the surfactant aqueous solution for development of a coating layer according to any one of claims 1 to 8 is used as a developer.